

Appl. No. : 09/389,720
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AMENDMENTS TO THE CLAIMS

1-19. (Canceled).

20. (Currently amended) An assembly, comprising:

a film including a plurality of substrate units with said plurality of substrate units being electrically interfaced with a plurality of dies, each one of said substrate units including a substantially central cavity adapted to receive wires from a corresponding die which connect to a first surface of said film, said dies being attached to a second surface of said film with said second surface being opposed to said first surface, said film comprising polyimide; and

a temporary carrier in mechanical communication with said first surface of said film for providing enhanced rigidity to said film by being sized and configured to add material at selected regions of said film, wherein said carrier is removed from said assembly upon completion of at least a portion of a process of manufacturing die packages.

21. (Original) The assembly of Claim 20, wherein said plurality of substrate units are grouped into substrate sets.

22. (Previously presented) The assembly of Claim 21, wherein said substrate sets comprise three substrate units.

23. (Original) The assembly of Claim 22, wherein said carrier further comprises a plurality of cross bars and wherein each cross bar is located near a substrate set.

24. (Original) The assembly of Claim 20, wherein said plurality of dies comprise lead-over-chips (LOC).

25-28. (Canceled).

29. (Original) The assembly of Claim 20, wherein each one of said plurality of substrate units includes a pair of adhesive tabs.

30. (Original) The assembly of Claim 20, wherein each one of said plurality of substrate units includes a plurality of alignment holes.

31-58. (Canceled).

59. (Previously presented) The assembly of Claim 20, wherein said carrier comprises a first side bar and a second side bar.

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60. **(Previously presented)** The assembly of Claim 59, wherein said first side bar comprises a plurality of first teeth and said second side bar comprises a plurality of second teeth.

61. **(Previously presented)** The assembly of Claim 60, wherein a respective one of said first teeth is substantially aligned with a respective one of said second teeth to flank a respective one of said substrate units therebetween.

62. **(Previously presented)** An assembly, comprising:
a plurality of semiconductors;

a generally flat flexible tape comprising a plurality of substrate units with each being flanked by a pair of slots to facilitate removal and each having a cavity therebetween to receive lead wires from a respective one of said semiconductors, each of said substrate units having a first surface to which said wires from a respective one of said semiconductors are connected and a second opposed surface to which a respective one of said semiconductors is attached so that corresponding substrate units and corresponding semiconductors are in electrical communication; and

a temporary carrier connected to a surface of said flexible tape, said temporary carrier comprising a plurality of cross bars with adjacent cross bars having at least one of said substrate units therebetween, wherein said cross bars are separated from said assembly during manufacture of individual semiconductor packages.

63. **(Previously presented)** The assembly of Claim 62, wherein said flexible tape further comprises cross rails that are that are substantially aligned with said cross bars.

64. **(Previously presented)** The assembly of Claim 62, wherein said flexible tape and said carrier comprise an integral unit.

65. **(Previously presented)** The assembly of Claim 64, wherein said flexible tape and said carrier are molded to form said integral unit.

66. **(Previously presented)** The assembly of Claim 62, wherein said carrier further comprises a pair of spaced teeth between adjacent slots such that each of said

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substrate units is generally circumscribed by a respective pair of said teeth and a respective pair of said slots.

67. **(Previously presented)** The assembly of Claim 66, wherein said teeth are substantially aligned with projecting portions of said flexible tape.

68. **(Previously presented)** The assembly of Claim 66, wherein a respective one of said teeth is between a pair of notches formed in said carrier.

69. **(Previously presented)** The assembly of Claim 68, wherein said notches are aligned with closed ends of said slots.

70. **(Previously presented)** The assembly of Claim 62, in combination with a plurality of encapsulating devices to form a plurality of ball grid array (BGA) packages.

71. **(Previously presented)** An assembly, comprising:

a plurality of semiconductor chips with each including a plurality of bonding pads;

a film comprising a first side rail, a second side rail and a plurality of substrate units therebetween, each of said substrate units including a plurality of bonding pads on a first surface of said film and a generally central cavity to expose said bonding pads of corresponding chips which are attached to a second surface of said film with said second surface being opposed to said first surface, each of said chips being electrically interfaced with a corresponding substrate unit by wires which are connected to respective bonding pads and pass through said cavities, said first side rail including a plurality of spaced first projecting portions and said second side rail including a plurality of spaced second projecting portions, a respective one of said first projecting portions and a respective one of a said second projecting portions generally defining two edges of a respective one of said substrate units; and

a carrier in mechanical communication with said film to support said film during assembly and bonding of said substrate units and said chips, said carrier being on said first surface of said film, said carrier comprising a first side bar substantially aligned with said first side rail of said film and a second side bar substantially aligned with said second rail of said film, said first side bar including a plurality of spaced first teeth substantially aligned with said first projecting

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portions and said second side bar including a plurality of second teeth substantially aligned with said second projecting portions.

72. **(Previously presented)** The assembly of Claim 71, wherein said carrier further includes alignment holes.

73. **(Previously presented)** The assembly of Claim 71, wherein said carrier comprises end bars.

74. **(Previously presented)** The assembly of Claim 71, wherein said carrier comprises BT resin.

75. **(Previously presented)** The assembly of Claim 71, wherein said carrier comprises a plurality of layers.

76. **(Previously presented)** The assembly of Claim 75, wherein said layers comprise at least one of copper, polyimide and solder resist.

77. **(Previously presented)** The assembly of Claim 71, wherein said carrier has a thickness of about 0.3 mm.

78. **(Previously presented)** The assembly of Claim 71, wherein said carrier has a length of about 182 mm.

79. **(Previously presented)** The assembly of Claim 71, wherein said carrier has a width of about 27 mm.

80. **(Previously presented)** The assembly of Claim 71, wherein said carrier further comprises cross bars which are removed from said assembly upon completion of at least a portion of a process of manufacturing chip packages.

81. **(Currently amended)** An assembly, comprising:

a film including a plurality of substrate units with said plurality of substrate units being electrically interfaced with a plurality of dies, each one of said substrate units including a substantially central cavity adapted to receive wires from a corresponding die which connect to a first surface of said film, said dies being attached to a second surface of said film with said second surface being opposed to said first surface, each one of said plurality of substrate units including a plurality of alignment holes; and

a temporary carrier in mechanical communication with said first surface of said film for providing enhanced rigidity to said film by being sized and

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configured to add material at selected regions of said film, wherein said carrier is removed from said assembly upon completion of at least a portion of a process of manufacturing die packages.

82. **(New)** The assembly of Claim 20, wherein said carrier comprises at least two discrete layers with each layer comprising a different material.

83. **(New)** The assembly of Claim 82, wherein said carrier comprises at least one indexing hole that extends through said layers.

84. **(New)** The assembly of Claim 83, wherein said film comprises at least one indexing hole substantially aligned with said at least one indexing hole of said carrier.

85. **(New)** The assembly of Claim 81, wherein said carrier comprises a plurality of indexing holes.

86. **(New)** The assembly of Claim 85, wherein said film comprises a plurality of indexing holes with each substantially aligned with a respective indexing hole of said carrier.

87. **(New)** The assembly of Claim 85, wherein at least some of said indexing holes are located on a side bar of said carrier.